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FEDERAL COMMUNICATIONS COMMISSION
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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	)	CC Docket No. 97-160

REPLY COMMENTS OF AT&T CORP. AND
MCI TELECOMMUNICATIONS CORPORATION ON CUSTOMER LOCATION ISSUES

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SUMMARY

The comments submitted on customer location issues clearly reveal that the selected cost mechanism should use actual customer locations wherever such data are available, an approach that has been embraced by Hatfield's designers, but eschewed by the BCPM sponsors. The comments also indicate that incumbent LECs already have extensive information on actual customer locations and line counts. The Commission should take the necessary steps to ensure the release of these data to model designers.

As AT&T and MCI discuss in Section I, a grid cell approach that refrains from using actual customer locations when they are available is unequivocally inferior to a methodology that uses such data. The BCPM's proposed approach -- which will not even be thoroughly described until after the customer location segment of proceeding has been completed -- apparently will employ a complex series of disaggregations and reaggregations of "microgrids," "subgrids," "subpartitioned subgrids," "partial grids," "macrogrids," and "ultimate grids." It is not at all clear that this iterative process adds any degree of accuracy. This is particularly true because the entire grid cell scheme is dependent upon the relationship between road mileage and customer location which has never been shown to exhibit any meaningful correlation.

Section II discusses the Hatfield Model's enhancements in its next release as well as the criticism that has been leveled at the model. Much of this criticism is irrelevant because it focuses on features and characteristics of Hatfield Model 3.1, not Hatfield Model 4.0. Moreover, most critics of the model assert that it would be better to use actual customer locations, instead of the current population distribution assumptions. Hatfield's designers agree. Consequently, the next release will use geocoded data to determine the number of clusters in a CBG, the size and location

of the clusters, and the distance between customers within a cluster. Hatfield's proponents also continue to investigate the efficacy of mapping individual strands to actual customer locations. In short, the BCPM sponsors have charted an inflexible course that relies on inferior data when superior data are readily available and possibly already in their possession.

The comments also reveal that actual loop lengths are not a useful measure for verifying cost models calculations. As AT&T and MCI demonstrate in Section III, the embedded figures are inconsistent with a forward-looking approach because any universal service telephone network today might be built with different loop lengths reflecting greater efficiencies, a different set of services, and technological enhancements. Moreover, the BCPM sponsors point out that only an average loop length is available for central offices. And this average is typically based on an inadequate sample. Hence, any comparison between actual loop lengths an this average figure would be unreliable and an improper comparison of apples and oranges.

Section IV reiterates that Hatfield provides the best method for assigning CBGs to wire centers. In forthcoming releases, its algorithm will be further improved by assigning customers (not CBGs, CBs, or "ultimate grids") to wire centers using actual telephone number data, thereby avoiding the problems inherent in the BCPM's "microgrid" approach.

Finally, in Section V, AT&T and MCI demonstrate that the Commission should focus on obtaining line count data from incumbent LECs, not establishing artificial closing factor limitations. Further, Hatfield already does a good job -- much better than the BCPM -- of accounting for actual line counts.

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REPLY COMMENTS OF AT&T CORP. AND
MCI TELECOMMUNICATIONS CORPORATION ON CUSTOMER LOCATION ISSUES

Pursuant to the Commission's Further Notice of Proposed Rulemaking,[1] AT&T Corp. ("AT&T") and MCI Telecommunications Corporation ("MCI") hereby submit their joint reply comments with respect to the customer location issues designated by the Commission in Section III.C.1 of the FNPRM that affect the selection of a forward-looking cost mechanism for use in determining the level of federal support for universal service in high cost areas.

INTRODUCTORY STATEMENT

The comments submitted on customer location reveal nearly universal agreement that the selected cost model should, to the extent practicable, account for actual customer locations in estimating universal service costs. And, as AT&T and MCI (at 6) explained in their initial

[1] Federal-State Joint Board on Universal Service, Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, CC Docket Nos. 96-45, 97-160, Further Notice of Proposed Rulemaking (released July 18, 1997) ("FNPRM").

comments, the next release of the Hatfield Model will incorporate geocoded data consistent with this objective. While some questions may remain regarding the optimal use of actual customer location data, there can be no doubt that a cost model that properly relies on geocoded data will be superior to one like the Benchmark Cost Proxy Model ("BCPM") that relies solely on some artificial grid cell-based methodology.

The customer location comments also reveal that a wealth of data has already been compiled on actual customer locations and line counts. See, e.g., Aliant (at 2) (BLR Data has compiled "with . . . 90% accuracy the latitude and longitude of household and businesses"); TDS at 12 ("some non-rural ILECs have developed data bases that will geo-code the households in their areas"). Most notably, some incumbent local exchange carriers ("LECs") refer to data that they already have in their possession. See, e.g., Ameritech at 6 (Ameritech has "the addresses where all of its customers' circuits terminate as well as the count of each circuit type . . . . Ameritech is geocoding these locations and has geo-coded a majority of them").[2] By utilizing this incumbent LEC data as well as other information already available, the actual location of most customers in the United States can be identified with a high level of accuracy. Clearly, then, the Commission has a tremendous opportunity to improve the ability of any cost mechanism to estimate accurately universal service costs -- it can take the necessary steps to ensure that this data will be available for use in the design and operation of the selected cost model.

[2] See also Ameritech at 8 ("Ameritech has line counts by [distribution areas]. . . .This information should be available in comparable operating systems of other non-rural companies"); Bell Atlantic at 1 ("The local exchange carriers have reliable data with which to assign customers and to count lines by wire center").

I. THE COMMENTS CLEARLY DEMONSTRATE THAT A GRID CELL APPROACH IS INFERIOR TO AN APPROACH INCORPORATING ACTUAL CUSTOMER LOCATIONS.

With the predictable exception of the BCPM's proponents, almost all of the other commenters recognize the tremendous improvements that relying on geocoded data will produce. See, e.g., Aliant at 2; Ameritech at 6 ("If [customer locations] are geocoded, then the actual dispersion of customers is known"); RUS at 2; TDS at 12. As TDS (at 13) notes, "[i]mproved information sources such as geo-coding would also facilitate better network design and modeling[.]" Even GTE (at 11-12), while claiming to endorse a grid cell approach, favors a cost mechanism that incorporates actual customer locations.[3] And as AT&T and MCI (at 6) have previously asserted, the next Hatfield release will use geocoded data in its customer locations algorithm wherever available. Of course, the model's designers could accelerate this enhancement process if the incumbent LECs were to produce the line count and customer location data that they have already compiled.

The BCPM "grid cell" approach is plainly inferior. AT&T and MCI (at 3) noted in their initial comments that a grid cell approach will merely add a false sense of accuracy unless the input data is capable of disaggregation beyond the CB level. See also Bell Atlantic, Attachment at 1; TDS at 9-10. The BCPM's proponents have failed to demonstrate that their grid cell methodology -- composed of "microgrids," "subgrids," "subpartitioned subgrids," "partial grids,"

[3] GTE (at 4-5) advocates "geo-cod[ing] random samples of locations and extrapolat[ing] [to] larger areas, such as grid cells." GTE (at 11) also incorrectly claims that geocoding cannot be conducted on a national scale. In fact, the level of inaccuracy that extrapolation would introduce is unnecessary in most areas because geocoded data is already available for most areas.

"macrogrids," and "ultimate grids" -- can overcome this limitation.[4] The reed upon which all of the new BCPM's disaggregation appears to be based is an unverified relation between road miles and customer lines. The BCPM's designers have charted a course inflexibly affixed to general and highly questionably assumptions about population distribution rather than turning to the superior actual customer location data currently available and very likely already in their possession. Most telling of all, they provide no justification for this decision except possibly administrative ease (BellSouth/Sprint/U S WEST at 15), an untenable position given the Hatfield Model designers' expressed intention to incorporate these data in the next release of their Model.

Unfortunately, the BCPM's proponents have provided only a cursory description of their enhancements and have indicated that detailed information will not be forthcoming until after the comment period on the customer location phase of this proceeding is completed. BellSouth/Sprint/U S WEST at 4. The BCPM sponsors do not even provide a guess when an actual operational version of the model with actual results will be available. However, even the cursory description, as discussed further below, reveals that the "enhanced" BCPM will not only have an absurd and pointless level of complexity, repeatedly disaggregating and reaggregating data without adding any additional accuracy, but also will invariably perform poorly in many rural areas that are the focus of universal service costing (see, e.g., RUS at 3).

Contrary to its proponents' claims, the BCPM's grid cell approach will not "locate customers where they really live" (BellSouth/Sprint/U S WEST at 19), but rather will build a

[4] GTE (at 4) claims that "[f]orecasted Census block data is publicly available and can easily be broken down to the grid cell level." GTE does not explain how this break down could be accomplished or that the data is in fact capable of further meaningful disaggregation.

house of cards based on many iterations of disaggregation and reaggregation. A ratio of road mileage to customer lines will apparently be used to estimate customer location. Id. at 10. This method of estimating customer location is at best inferior to using actual customer locations. The model's sponsors attempt to distract from this shortcoming by arguing that "[t]he enhanced BCPM recognizes that telephone plant engineers do not typically build plant on a customer by customer basis. . . . Thus, engineers recognize actual clustering of customers when implementing standard engineering practices that try to maximize the efficient use of plant, minimize the distribution portion of plant, and ensure adequate service quality." Id. at 5. What engineers do take into account in order to capitalize on these potential efficiencies, however, is actual customer location, not the method incorporated into the BCPM model or anything resembling it. Simply put, an engineer must first know where the customers are in order efficiently to deploy plant facilities that serve multiple customers because that is the goal, and not simply to deploy plant to keep roads company.

The BCPM's proposed assignment process appears to be entirely arbitrary and not to reflect actual population distribution characteristics. For example, if one-third of the road mileage in a CBG traverses a particular "microgrid," then one-third of the business lines and households are assigned to that microgrid. See BellSouth/Sprint/U S WEST at 10. But only those roads selected by the BCPM -- a list that they still have yet to provide (id. at n.6) even though their comments purport to demonstrate the types of results that the new version will produce -- are included, and they apparently do not account for the differences in population distributions that often arise along different roads in very small geographic areas. Some roads will attend industrial zones, others residential areas, and still others primarily retail or service oriented activities. And, of course, some roads will have a mix of one or more types -- or no telephone customers at all. Moreover, the greatest divergence in the relationship between actual customer location and road location is likely to arise in rural areas, exactly those regions the BCPM sponsors have wrongly claimed this algorithm will better address.[5] Furthermore, there has been no demonstration that road mileage tracks customer line counts any better than simpler measures such as area. Because the data does not reflect these and many other population variations, simply assigning customers to "micrograms" based on the amount of road mileage in each "microgrid" does not increase the accuracy of the cost modeling process and may well decrease accuracy.

This process is only exacerbated by the reaggregation process of "microgrids" into "larger grids as appropriate." BellSouth/Sprint/U S WEST at 10. But these larger grids are constrained by an overlay of "macrogrids" supposedly designed to prevent isolated "microgrids." <u>Id.</u> at 11. The "macrogrids," however, may require a series of partitions into "subgrids" that may continue until the "partitioned subgrid" becomes the size of the "microgrid." <u>Id.</u> at 12. But now, the circularity of the new BCPM's customer location algorithm becomes readily apparent. As its proponents attest, "[t]he ultimate grid size utilized essentially reflects the manner in which customers are clustered." Of course, the BCPM's "clustering" is no more than a product of the

[5] A long road could easily cross several "microgrids" in a CBG. Presumably, each "microgrid" will have the same number of customer lines assigned to it so long as it is not empty. To a much greater extent than urban CBGs, rural CBGs might have the vast majority of their population in only one or two "microgrids." As a result, the same relative number of lines might be assigned to each "microgrid" in a rural CBG as in a urban CBG even though they could have very divergent population dispersements. <u>See also</u> RUS at 3 ("The BCPM's 'within 500 feet of a [public] road' assumption is more generally valid in rural areas served by RUS borrower LECs, but this assumption fails in such diverse areas as southwestern Texas and eastern Tennessee"); TDS at 10.

road assignment process used at the "microgrid" stage, a process which does not incorporate actual customer locations, and consequently cannot capture the actual manner in which customers are clustered. Indeed, one would suspect that the subpartitioning process would often produce exactly the type of uniform customer distribution across a set of grid cells (here "microgrid" cells) that the BCPM sponsors claim the grid process is designed to avoid, i.e., a uniform distribution of customers.[6]

In short, then, the new BCPM customer location process apparently will start by (i) disaggregating CB data by arbitrarily assigning business and residential lines to artificial "microgrids" based on road mileage, not telephony or network engineering criteria or any other characteristics of the data that exist at the "microgrid" level of detail, (ii) reaggregating the data in variably sized larger "grids" -- again, not based on telephony or network engineering criteria -- that cannot exceed the size of the "macrogrids," and (iii) partitioning the "macrogrid," if necessary, into "subgrids," "sub-partitioned subgrids," and sub-partitioned "sub-partitioned subgrids" until the "subgrid" size has the same number of household and business lines as the underlying "microgrids." Unfortunately, not even this tortured process will apparently prevent "small groups" of "microgrids" from being isolated, thereby forcing the model to arbitrarily assigned them to "those ultimate grids of equal or larger size, located closest to the road centroid." Id. at 12.[7] And, then, of course, there will also be "partial grids." Id.

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[6] In addition, because the BCPM "macrogrids" may be as large as 14,000 feet by 12,000 feet, a substantial amount of uncertainty may remain as to actual customer location.

[7] While the possibility that many "microgrids" may remain unassigned is problematic in and of itself, the fact that these "small groups" may actually exceed in size the nearest "ultimate grid" is even more alarming because it would appear that the algorithm might assign a large group of (continued...)

Unfortunately, the process will not stop there. The new BCPM will then apparently proceed to segment each "ultimate grid" into four quadrants and then combine them into a square distribution area based on the non-empty quadrants established. Id. After all these layers of disaggregation in "microgrids," reaggregation in "grids," disaggregation in "subgrids" and "ultimate grids," aggregation of isolated "microgrids" into "ultimate grids," disaggregation into quadrants, and finally reaggregation into square distribution areas, the BCPM's sponsors then make the incredible claim that this "approach provides a reasonable model of the required telecommunications network facilities[.]" Id. at 13.

II. UNLIKE THE BCPM, THE HATFIELD MODEL WILL ESTIMATE UNIVERSAL SERVICE COSTS BASED ON ACTUAL CUSTOMER LOCATIONS.

The comments clearly illustrate the desirability of using a clustering algorithm like that current employed by the Hatfield Model and especially like the one that the Model's designers have proposed. Aliant (at 3) suggests that "the model should have the capability to adjust a 'clustering factor' by individual wire centers[.]" While the Hatfield Model assumes a default 85% clustering factor, this factor is also user adjustable in Hatfield Model 4.0 on a CBG by CBG basis. And, as Aliant recognizes, this step would be unnecessary in all events if geocoded data are used. Id. The next Hatfield Model release will do just that in determining the number of clusters, the size and location of the clusters, and the distance between customers within a cluster.

(...continued)
"microgrids" to an "ultimate grid" that does not subtend the group. In other words, an "ultimate grid" may actually consist of noncontiguous geographic areas.

The Hatfield Model 4.0 applies mainstream population assumptions, including a clustering factor that can be adjusted by the user to better reflect actual clustering conditions if necessary. Most important of all, the Hatfield Model already does a superior job to the BCPM -- current or proposed -- of estimating universal service costs. Hatfield critics have attempted to distract the Commission by "cherry-picking" hypothetical diagrams of customer locations supposedly created by Hatfield and the BCPM, new and old, and comparing them to digitized satellite map data. See, e.g., BellSouth/Sprint/U S WEST, Attachment A). Even if these diagrams could provide useful information, they provide virtually no information on overall cost estimation performance. This is because they cannot capture accurately the distances between customers within clusters or the numbers of lines served at each location. As AT&T and MCI discussed in their initial comments (at 9), this factor drives distribution costs and has the greatest degree of variability.

Contrary to the BCPM sponsors' claims, the current Hatfield version 4.0 also reflects significant improvements in rural areas by using RUS and USTA data, Hatfield 4.0 Model Description at 8, and the next version of the Hatfield Model will reflect even more significant improvements.[8] Conceptually, clusters, or in some cases "superclusters," will replace the CBG as the unit of analysis in the Hatfield Model. These customer conglomerations will capture the most relevant factors for telephony, network engineering, and estimation of universal service costs,

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[8] Indetec has not demonstrated that the Model underestimates the route miles necessary to serve rural customers (BellSouth/Sprint/U S WEST, Attachment B) because the analysis is inherently flawed. For example, Indetec curiously chooses to discard a significant data point (Eagle Telecommunications) where Hatfield exceeds RUS mileage calculations -- choosing wishfully to dismiss it as erroneous RUS data -- even though inclusion of this data point would reverse Indetec's conclusions.

thereby obviating the need to rely on embedded incumbent LEC distribution areas (see, e.g., Ameritech at 3) or CBs (see, e.g., RUS at 2-4).[9]

The next release of the Hatfield Model will calculate costs based upon PNR's data which define clusters of customers based on geocoded customer locations. This identification is conducted on a wire center-by-wire center service area basis, without regard to CBG boundaries. Where the number of customers in a cluster does not reach a threshold value -- based on a reasonable engineering unit that can be adjusted by the user -- clusters are aggregated into "superclusters" containing a number of lines greater than or equal to the threshold value -- consistent with engineering and quality of service criteria. Superclusters are created because an efficient basic telephone network would use many of the same plant structures, such as SAIs, DLCs, and feeder cables to provide service to all customer within the supercluster. Where superclusters are formed, Hatfield calculates the amount of cable necessary to interconnect the clusters within the supercluster.

For each cluster or supercluster, the input data used in the Hatfield Model will include: (i) the wire center identification (CLLI), (ii) the centroid location (latitude and longitude), (iii) the omega angle, (iv) the alpha angle, (v) the radial distance from centroid to wire center, (vi) the

[9] Ameritech (at 6) claims that use of Bellcore's Loop Engineering Information System (LEIS) coupled with geocoded data would make clustering algorithms unnecessary. In fact, LEIS is primarily used in the Long Range Outside Plant Planning (LROPP) process for planning the feeder network which ends at the SAI, thereby estimating only feeder requirements -- not distribution costs. It also necessitates manual data population and updates by outside plant engineers, and it provides no audit trail that permits ready verification of the data's accuracy with the actual network. In addition, not all companies use BellCore's LEIS system fully, with some opting to exclude wire centers of less 5,000 lines. In short, LEIS is unreliable and, by ignoring distribution altogether, it has nothing to add to clustering or modeling customer location.

cluster or supercluster area, (vii) the cluster or supercluster density, (viii) the supercluster connecting cable length (if applicable), (ix) the CBG identification for CBGs containing the plurality of lines in the cluster, and (x) geological data, as well as (xi) total lines, (xii) business lines, (xiii) residence lines, (xiv) special access lines, (xv) public lines, (xvi) single-line businesses, (xvii) households in each of ten housing type categories, (xviii) firms, and (xiv) employees. In addition, a post-processing module will aggregate cluster-specific information to CBGs, aggregate wire center and density zone level information.

Almost all of the criticisms submitted in this proceeding of cost model customer location algorithms in general -- and certainly those leveled at the Hatfield Model -- will be addressed by these model enhancements.[10] For example, TDS (at 11) states that the selected model must "account reasonably precisely for variances" in determining cluster characteristics. Data sets that include actual customer location coupled with Hatfield's already extensive customer information will allow the Model to account for such variation. Similarly, the BCPM proponents' criticisms, which are generally misdirected and incorrect, will have no validity once geocoded data are

[10] GTE's criticism (at 6-9) are aimed almost entirely at Hatfield Model 3.1. Those allegations that have any validity whatsoever have either been addressed in Hatfield Model 4.0, will be resolved in the next Hatfield release which will incorporate geocoded data, or could be addressed, if necessary, through an adjustment by the user to the 85% clustering factor. Like GTE, RUS (at 2) and TDS (at 3) are also critical of the 85% clustering factor. Hatfield, however, has been specifically designed to allow the user to modify this value. Indeed, the Hatfield Model documentation has provided suggested alternative values for input on a state-by-state basis. Moreover, the next release of the Hatfield Model will obviate the need for this factor in most areas altogether because geocoded data will be used to accurately assess the distance between customers in a cluster, the size and location of a cluster, and the number of customers in an area.

incorporated.[11] And the next release of the Hatfield Model will also address PRTC's concerns (at 3) by using data for Puerto Rico where it is made available.

Although the Hatfield Model's designers believe that the next release of the model will be more than sufficient to accurately and satisfactorily estimate universal service costs, they continue to explore the desirability of modeling individual strands to each customer's location ("strand mapping"). This process would not replace clustering, but could increase the accuracy of determining distribution costs for a cluster or supercluster. It is unclear whether or not any gains in accuracy would justify the substantial increases in modeling complexity that would be required, particularly given that the next Hatfield release will already calculate the distance between customers in a cluster using geocoded data, the most important factor for determining distribution costs. Nevertheless, the Hatfield Model, unlike the BCPM (present or future) will have the potential to take this step.

The BCPM's sponsors ignore that any set of assumptions about customer location will invariably be inferior to the use of geocoded data in determining how many clusters to form, the size and location of the clusters, and the distance between customers in a cluster. In effect, BCPM's sponsors are advocating an inferior data set instead of the best available data on the indefensible basis that either set of data will have to be used in a clustering algorithm. Their

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[11] The BCPM's sponsors (at 4) even mischaracterize the current version of the Hatfield Model, implying that Hatfield assumes a uniform dispersion of customers across a CBG, a limitation they claim will be overcome in the new BCPM. Hatfield, however, has already eliminated this restriction as far back as its 3.1 version and will continue implementing far reaching enhancements in the future.

adherence to this untenable position, then, merely reflects the inability of their model in its current form, or as proposed, to calculate costs using strand mapping.

III. THE COMMENTS REVEAL THAT ACTUAL LOOP LENGTHS ARE NOT USEFUL FOR VERIFYING COST MODEL ESTIMATES.

Despite the claims of Aliant (at 3) and TDS (at 11-12), the comments demonstrate that comparing a model's estimated loop lengths to the existing network's actual loop lengths would be inappropriate. Indeed, this is one area where all cost model proponents are in accord. See AT&T and MCI at 10-11; BellSouth/Sprint/U S WEST at 21-22. This "verification" methodology would not be useful because it is inconsistent with the estimation of forward-looking costs and, even if it was consistent with TELRIC, the comparison would not be statistically meaningful in most cases. First, under a forward-looking approach, variance from figures that reflect past incumbent LEC practices cannot prove or disprove the accuracy or inaccuracy of forward-looking cost estimates. In particular, loop lengths might be longer due to increased reliance on efficient "double star" DLC network architectures or shorter if the embedded loop routes some customers over much longer loops to a distant switch in order to receive Centrex service (a cost that should not be supported by universal service subsidies). And of course, the existing network may include inefficient loop configurations.

Second, as the BCPM sponsors correctly note, data on loop length for a central office is only available in an average format. BellSouth/Sprint/U S WEST at 21-22. Consequently, the comparison of the individual loop lengths at a wire center to the average central office length would be simply a comparison of apples and oranges. Even the average itself is typically based on a small statistical sample. AT&T and MCI agree, then, that this limitation makes it "questionable what value these loop statistics would have for high-cost support targeting." Id.

IV. THE HATFIELD MODEL EMPLOYS A "STATE-OF-THE-ART" MECHANISM FOR ASSIGNING A CBG TO A WIRE CENTER AND WILL ASSIGN THE ACTUAL CUSTOMER TO THE APPROPRIATE WIRE CENTER IN FUTURE RELEASES.

As AT&T and MCI (at 11) stressed in their initial comments, concerns about Hatfield's "assignment of CBGs to incorrect wire centers" (FNPRM ¶ 49) are misplaced. Past criticism has focused on Hatfield Model 3.0, whereas Hatfield 4.0 is much more effective in assigning a CBG to the same wire center that actually provides it service in the existing network. The Hatfield NPA-NXX approach using actual customer data is the best assignment method in existence and the Model's developers are already implementing a new algorithm that will further reduce any error. This forthcoming method will assign an individual customer (not a CB, CBG or "ultimate grid") to a wire center based on the customer's actual telephone number when available, thereby avoiding all of the difficulties as well as unreliable results inherent in the new BCPM's "microgrid" approach.

V. THE COMMENTS DEMONSTRATE THAT INCUMBENT LECS POSSESS LINE COUNT DATA THAT WOULD IMPROVE THE ACCURACY OF THE HATFIELD MODEL'S ALREADY HIGHLY ACCURATE LINE ASSIGNMENT ALGORITHM.

The comments confirm that incumbent LECs have line count data in their possession. The best approach, then, to improving the accuracy of cost model generated line counts is for the Commission to take the necessary steps to ensure that model designers have access to this information. In fact, the Hatfield Model presently has the capability to generate universal service cost estimates using the exact line counts released by the incumbent LECs. Nevertheless, some carriers continue in their efforts to restrict access to this information. GTE (at 13) for one wants the selected model "to use actual ILEC wire center count information" as submitted to the

Commission in response its universal service data request. At the same time, GTE (at 13-14) intends to restrict access to this data to the universal service fund administrator, a limitation that would prevent other model designers from making the most efficient use of this information. And then, protected by this veil of secrecy, GTE makes wholly unverifiable claims, including that GTE's Integrated Cost Model uses grid cells, CB data and GTE proprietary information "to render an exceptionally accurate picture" of customer locations. GTE at 4. Incumbent LECs can best demonstrate their commitment to providing affordable basic telephone service -- and validate such currently unsubstantiated claims -- by making line count information available to cost model developers. See Bell Atlantic (Attachment at 3) (suggesting that "the LECs can produce actual line counts by wire center. . .eliminat[ing] the need for 'closing factors' to reconcile estimated line counts based on CBGs or CBs with actual line counts").

Even without these data, the Hatfield Model already provides an excellent method for assigning CBGs to wire centers. Indeed, some commenters are suggesting improvements that the Hatfield Model already incorporates or that are being considered for future releases.[12] For example, WorldCom (at 5) has suggested that the selected cost model determine the number of business lines based on "the number of employees and SIC for each business[.]" In fact, this is exactly what the Hatfield Model already does.

Moreover, there is no cause for concern about the Hatfield Model's closing factors. With Hatfield 4.0, many new enhancements were implemented that reduce the closing factors and, more importantly, no commenters have demonstrated why the use of a closing factor has an

[12] RUS (at 4) and GTE (at 10) both examine Hatfield Model 3.1's line counts, providing criticism that is both misleading and in all events focused on an outdated version.

adverse impact on universal service cost estimates. Indeed, just the opposite is true. Closing factors ensure that the cost model incorporates the correct number of lines. Some commenters, however, misapprehend the use of closing factors. For example, TDS (at 14) questions the accuracy of network design or carrier pricing decisions made without 10% of the relevant data[,]" when in fact no available information is being neglected. The "closing factors" ensure that the model will account for each and every line and thereby calculate sufficient costs to guarantee that the network would not suffer any loss in quality. Similarly, there is no reason to worry about "missed" wire centers because it appears that most of these wire centers should not be included in a model of USF support.[13] If it can be shown that they do belong in a universal service cost model, Hatfield will incorporate them.

[13] AT&T and MCI (at 13-14) noted in the initial comments that these "missed" wire centers -- ones not assigned to a CBG -- are usually "(i) de minimis in size; (ii) lacking any working lines; (iii) so new that no customers have been identified as being served by that wire center; or (iv) do not actually constitute a public wire center."

CONCLUSION

For the foregoing reasons, the Commission should adopt the Hatfield Model approach to modeling customer location.

Respectfully submitted,

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September 10, 1997

CERTIFICATE OF SERVICE

I, Scott M. Bohannon, do hereby certify that on this 10th day of September, 1997, I caused a copy of the foregoing Reply Comments of AT&T Corp. and MCI Telecommunications Corporation to be served upon each of the parties listed on the attached Service List by U.S. First Class mail, postage prepaid.

/s/ Scott M. Bohannon
Scott M. Bohannon

SERVICE LIST

The Honorable Reed E. Hundt
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